The networking infrastructure solution that brings it all together

ConneXium

Schneider Electric

Enhanced plant productivity

Your need:
Improve network reliability and performance

Our solution:
ConneXium switches, gateways, cables, connectors, and diagnostic software

When integrated into an overall automation architecture, ConneXium infrastructure devices and ConneXview diagnostic software will help you achieve optimum network performance and enhance plant productivity.

ConneXium

Managed and unmanaged switches
Gateways
Cables and connectors
Network diagnostic software

As the industrial environment has moved toward Ethernet and open communications protocols, new layers have been added to the typical factory architecture, making them more complex and harder to manage than ever before. And with competitive pressures demanding that every minute of production time be fully optimized, it's not surprising that there's very little tolerance for network downtime that could result in lost productivity.

So why take chances on network infrastructure devices that aren't designed for the industrial environment when you can choose ConneXium — the network infrastructure products from Schneider Electric that are designed specifically for production environments like yours.

ConneXium products are thoroughly tested for interoperability with other Schneider Electric automation products, so that when they are integrated within a complete automation architecture you can be confident of reliable, dependable performance…performance that you simply can't get when using untested products from other manufacturers.

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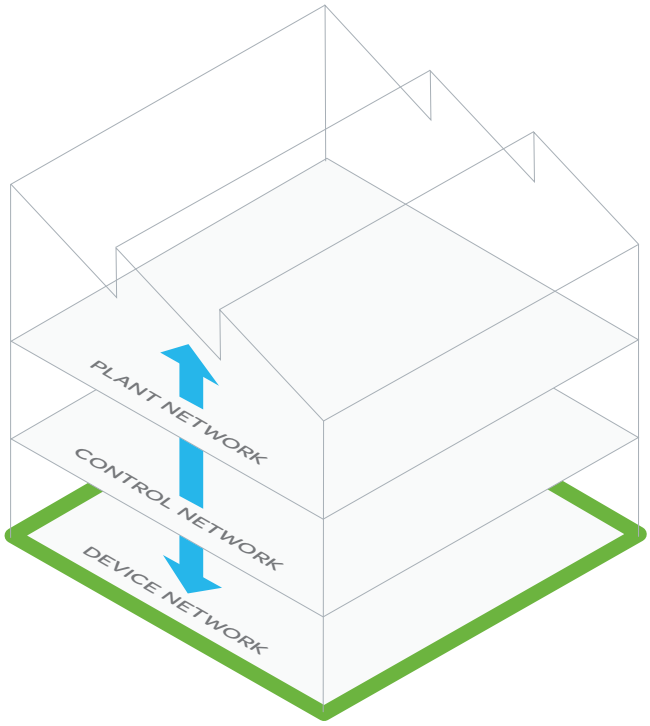


ConneXium products help to seamlessly connect everything from your plant floor to your plant network.

Choose from a range of solutions

Managed switches

ConneXium managed switches provide a wealth of high level functionality that enhances network availability and performance.

Maximise system uptime
- RSTP
- MRP
- HIPER-ring
- Faulty Device Replacement

Guard your network from unauthorised access
- IP address restriction
- port security
- SNMP data encryption
- VLAN-sharing

Facilitate troubleshooting
- device diagnostics
- SNMP
- alarm relays
- port mirroring
- log files
- duplicate IP address detection

Reduce the chances of a network overload
- broadcast storm filters
- class of service controls
- quality of service controls

Fibre optic capability
- resistance to electrical interference
- extend your network over long distances

Unmanaged switches

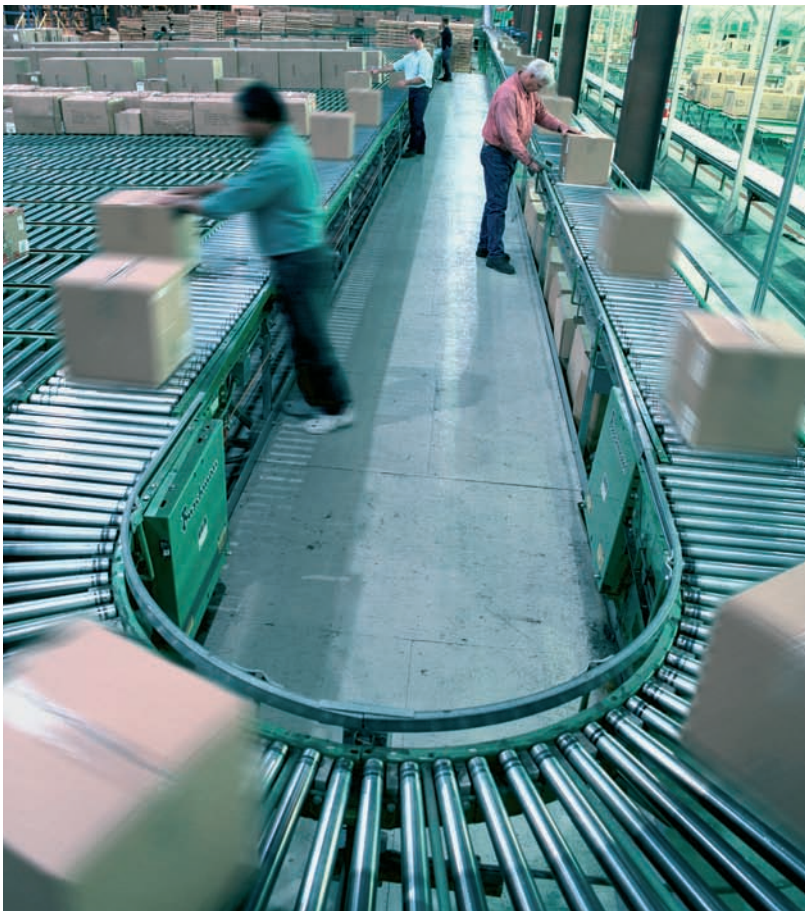
ConneXium unmanaged switches are industrial grade, low-cost devices that can be used in simple networks to reduce the limitations of hub- or transceiver-based architectures.
- minimise data collisions
- free up network traffic
- “plug ’n play”
- easy to implement
- remote diagnostics (some models)
- IP67 for harsh environments

Gateways

Protect your investment in legacy systems with ConneXium gateways that connect Modbus or Modbus Plus networks to Ethernet, helping move your plant forward into the age of information transparency via the openness of industrial Ethernet.

Accessories: cables, connectors, IP67 patch cords, and adapters

ConneXium accessories are manufactured to strict specifications in order to meet the demands of the industrial environment. Please see the product selection guide for a full list of available products.



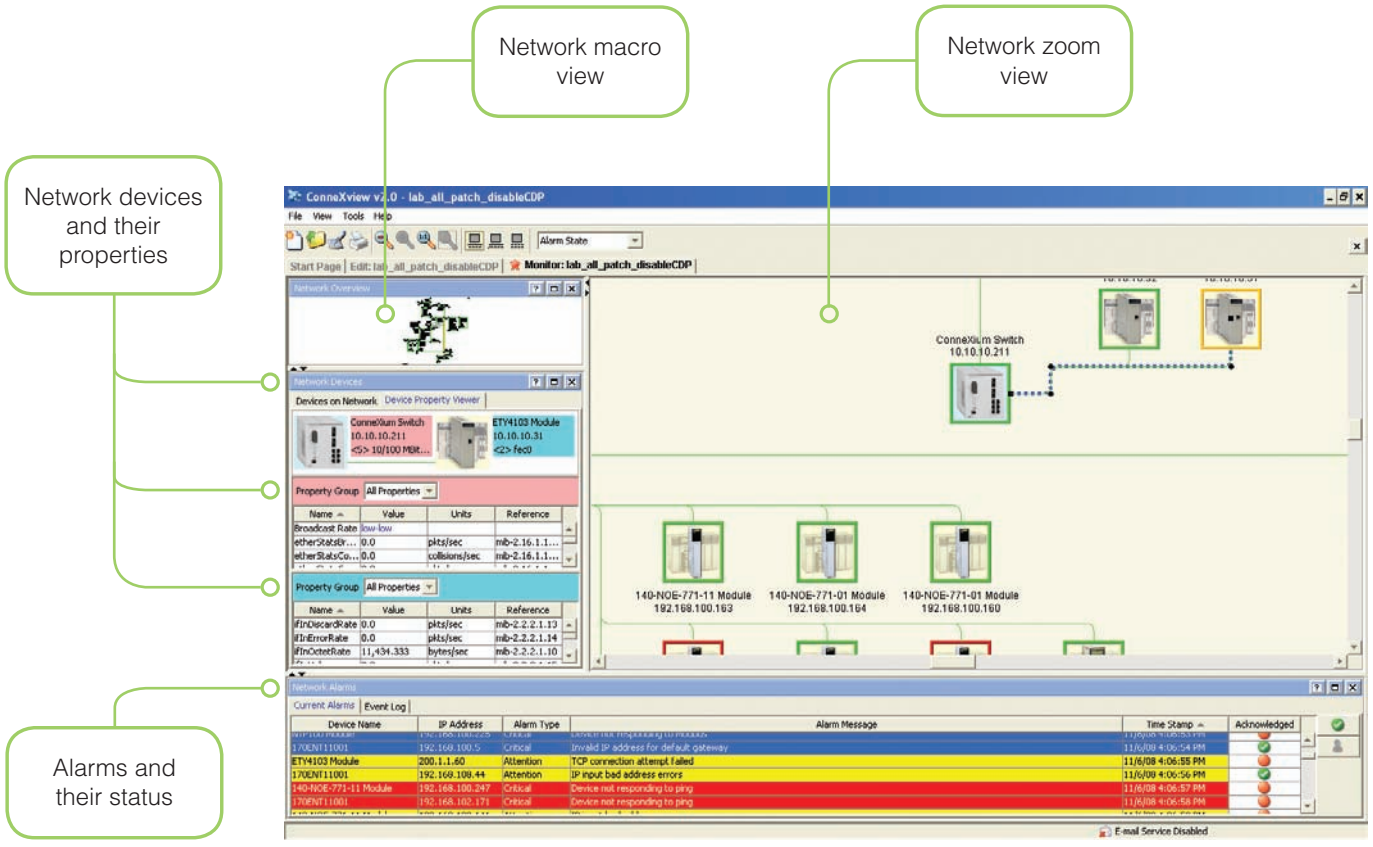
The cost-savings by preventing just a single downtime event would easily justify the entire cost of a product that could prevent it from happening in the first place!

ConneXview Ethernet network diagnostic software

Keep your network moving at peak efficiency

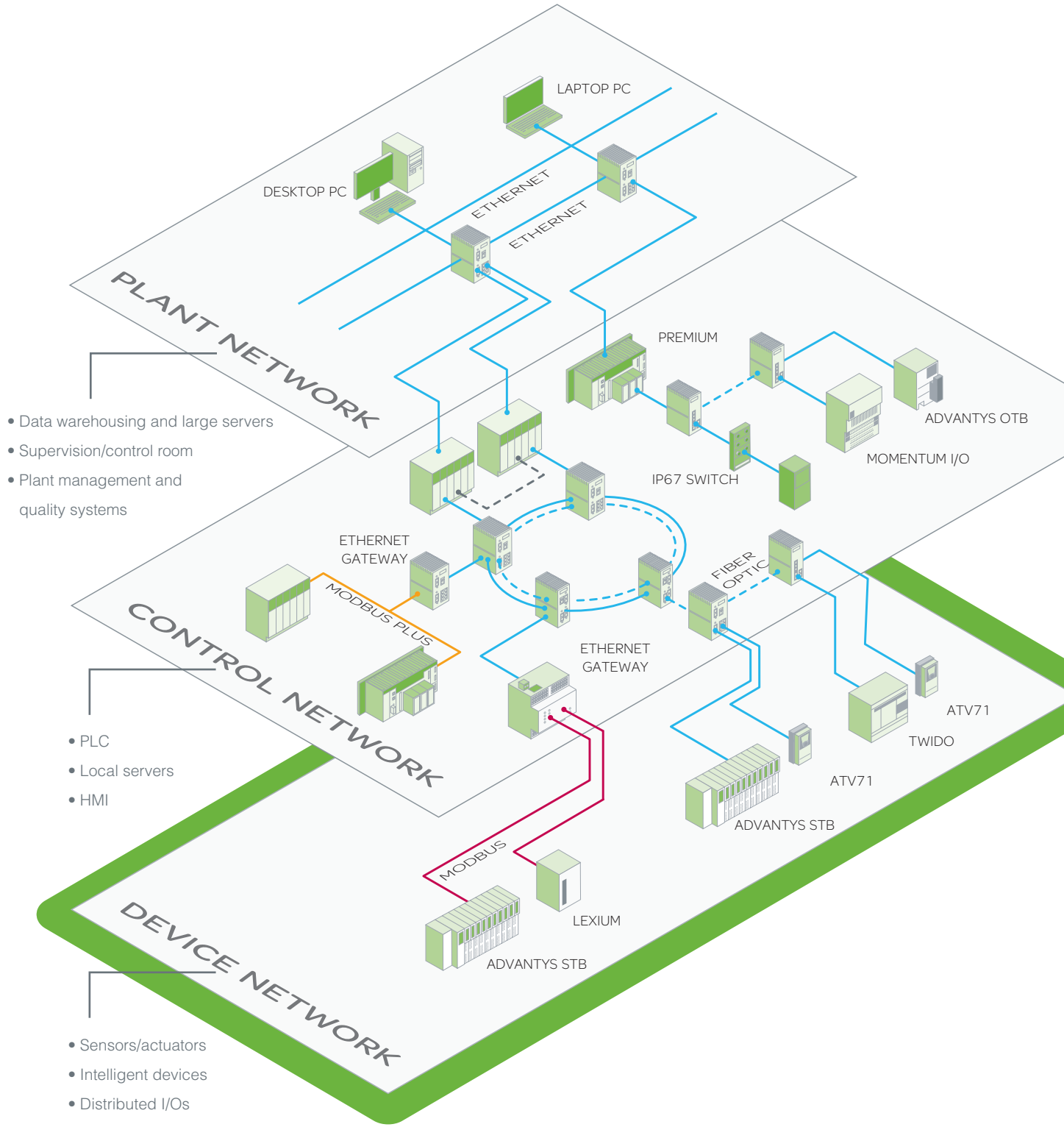
To further optimise network performance, we offer ConneXview network diagnostic software, a user-friendly yet powerful tool that lets you visualise your entire network on a single screen, making it easy to monitor, troubleshoot and diagnose performance-related issues on your industrial Ethernet networks.

It's more than just a simple tool to visualise your network — ConneXview lets you perform a wide variety of intelligent functions to keep your network traffic moving at peak efficiency, and your entire factory performing at optimum productivity.



A wealth of information at your fingertips, with everything accessible from a single screen

ConneXium In the industrial Ethernet environment



ConneXium Network tips and guidelines

General recommendations

- Use switches to eliminate collisions, increase performance, and simplify network design
- Avoid using hubs whenever possible
- Understand network traffic and segment network properly

High bandwidth availability

- Use full-duplex switches (10BASE-T/100BASE-TX)
- Understand network traffic and segment network properly

Minimum application downtime — TCS ESM ••3F•••0

- Use self-healing ring or redundant self-healing ring networks

Basic level diagnostics (such as No Link or failure of one P/S) — 499 N•S 251 01, 499

- Use unmanaged switches with alarm relay N•S 251 02 and 499 NES 181 00

High level diagnostic, services, and traffic administration — TCS ESM ••3F•••0

- Use managed switches

Network discovery and monitoring — TCS ESM ••3F•••0

- Use managed switches

Interconnecting devices separated by long distances (> 100m) — TCS ESM ••3F•••0

- Use fibre optic products
  Multi-mode fibre: Up to 2 km between nodes
  Single mode fibre: Up to 15 km between nodes
  Note: Depending on the optical budget (signal strength), you can achieve 4 km in multi-mode and 30 km in single mode (see Transparent Ready Catalog)

Higher speed, more bandwidth — TCS ESM 103F2•G0

- Use products with gigabit backbone ports

High immunity to electromagnetic noise — 499 N•S 2510•/ TCS ESM ••3F•••0

- Use products with fibre optic ports

Physical medium change

- Use transceivers or switches with a combination of copper and fibre optic ports

External (IP67) mounting of the switch — TCS ESU 051 F0

- Use IP67 switches and cables

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ConneXium Selection guide

	Description	Media	Commercial Reference
Managed Switches			
4 Ports	4TX	Copper	TCSESM043F23F0
	3TX/1FX 2TX/2FX	Copper/Multi-mode fibre Copper/Multi-mode fibre	TCSESM043F1CU0 TCSESM043F2CU0
	3TX/1FX 2TX/2FX	Copper/Single-mode fibre Copper/Single-mode fibre	TCSESM043F1CS0 TCSESM043F2CS0
8 Ports	8TX	Copper	TCSESM083F23F0
	7TX/1FX 6TX/2FX	Copper/Multi-mode fibre Copper/Multi-mode fibre	TCSESM083F1CU0 TCSESM083F2CU0
	7TX/1FX 6TX/2FX	Copper/Single-mode fibre Copper/Single-mode fibre	TCSESM083F1CS0 TCSESM083F2CS0
16 Ports	16TX 14TX/2FX	Copper Copper/Multi-mode fibre	TCSESM163F23F0 TCSESM163F2CU0
24 Ports	22TX/2FX	Copper/Multi-mode fibre	TCSESM243F2CU0
10-Port gigabit managed switch	8TX/2TX-Gbit 8TX/2SFP-Gbit * Note: This product ships with open sockets (SFP) on the fibre ports. In order to use these ports, order 1 or 2 fibre modules in any combination (see below).	Copper/Gbit copper Copper/Gbit fibre	TCSESM103F23G0 TCSESM103F2LG0 *
Fibre modules - (SPF gigabit switch only)	SFP-SX/LC (50/125µm - 550m) (62.5/125µm - 275m)	Multi-mode fibre	TCSEAAF1LFU00
	SFP-LX/LC (50/125µm - 550m) (62.5/125µm - 550m) (9/125µm – 20km)	Single- or multi-mode fibre	TCSEAAF1LFS00
	SFP-LH/LC (9/125µm – 72km)	Single-mode long haul fibre	TCSEAAF1LFH00
Accessories	ConneXium memory backup adapter (optional) ConneXium serial configuration cable (optional)		TCSEAM0100 490NTRJ11
Unmanaged Switches			
3 Ports	3TX	Copper	TCSESU033FN0
5 Ports	4TX/1FX	Copper/Multi-mode fibre	TCSESU043F1N0
	5TX	Copper	TCSESU053FN0
	4TX/1FX 3TX/2FX	Copper/Multi-mode fibre Copper/Multi-mode fibre	499NMS25101 499NMS25102
	4TX/1FX 3TX/2FX	Copper/Single-mode fibre Copper/Single-mode fibre	499NSS25101 499NSS25102
8 Ports	8TX	Copper	499NES18100

Schneider Electric

ConneXium Selection guide

	Description	Media	Commercial reference
IP67 Unmanaged Switches			
5 Ports	5TX (M12 type D female connector)	Copper	TCSESU051F0
IP67 switch accessories	Power cable - female M12, straight Power cable - female M12, elbow		XZCP1164Lx XZCP1264Lx
	Spare power connector - female M12, straight Spare power connector - female M12, elbow		XZCC12FDM50B XZCC12FCM50B
Hubs			
	4x10 BASE-T	Copper	499NEH10410
Transceivers			
	1x100 BASE-TX / 1x100 BASE-FX	Copper/Multi-mode fibre	499NTR10100
Gateways			
	Modbus/ Ethernet Modbus Plus/ Ethernet	Copper Copper	TSXETG100 174CEV20040
Converters			
	Twidoport Ethernet		499TWD01100
Cables			
The "x" in the reference numbers for cables is a placeholder for the various lengths in which they are available. Please see the ConneXium catalog for specific cable lengths.	Ethernet STP CAT5/RJ45 - EIA/ TIA 568 Ethernet STP CAT5/RJ45 - UL, CSA 22.1		490NTW000xx 490NTW000xxU
	Ethernet STP CAT5/RJ45 - EIA/ TIA 568 (crossed cables) Ethernet STP CAT5/RJ45 - UL, CSA 22.1 (crossed cables)		490NTC000xx 490NTC000xxU
	Straight; RJ45 male to M12 D-coded 4 pole male Straight; M12 D-coded 4 pole male to M12 D-coded 4 pole male		TCSECL1M3MxS2 TCSECL1M1MxS2
	Adapter; M12 D-coded 4 pole female (IP67) to RJ45 female (IP20)		TCSEAAF11F13F00
	Fibre optic adapter cable, SC/MT-RJ, 5m Fibre optic adapter cable, ST/MT-RJ, 5m Fibre optic adapter cable, MT-RJ/MT-RJ, 3m Fibre optic adapter cable, MT-RJ/MT-RJ, 5m		490NOC00005 490NOT00005 490NOR00003 490NOR00005

	Description	Part number
Software		
ConneXview Ethernet diagnostic software	Server single user license Client single license	TCSEAZ01PSFM20S TCSEAZ01PSFM20C
	Single server subscription Single client subscription	TCSEAZ01PSSMS TCSEAZ01PSSMC

Note: Copper media is 10/100 BASE-TX with RJ45 connectors, except as noted.
Fibre optic media is 100 BASE-FX, single- or multi-mode as noted, with SC duplex connectors.
Gigabit fibre media is 10/100/1000 BASE-FX with LC connectors.
Gigabit copper media is 10/100/1000 BASE-TX with RJ45 connectors.
For more detailed product descriptions, characteristics and options, please refer to the ConneXium catalog.

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ConneXium switches, gateways and cables, and ConneXview network diagnostic software from Schneider Electric help you optimize network performance and improve plant productivity.

They are specifically designed and tested for automation networks and industrial environments like yours, and when implemented within an overall automation system from Schneider Electric, they truly are the networking infrastructure solution that brings it all together.

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